What is claimed is:

1. A method for forming a photoresist relief image, comprising:

(a) applying a coating layer of a photoresist composition onto a substrate, the photoresist composition comprising a silsesquioxane resin;

(b) exposing the photoresist composition to patterned activating radiation; and

(c) developing the exposed photoresist layer to provide a photoresist relief;

wherein the exposing of the photoresist does not result in a detectable output of Si species at a concentration of 1×10^{13} molecules/cm^2 or greater.

2. The method of claim 1 wherein the silsesquioxane resin is fluorinated.

3. The method of claim 2 wherein silsesquioxane resin has pendant fluoroalkyl groups.

4. The method of claim 1 wherein the silsesquioxane resin has photoacid-labile groups.

5. The method of claim 1 wherein the photoresist is coated over an organic polymer layer.

6. The method of claim 1 wherein the photoresist does not have a detectable output of Si species at a concentration of 1×10^{12} molecules/cm^2 or greater.

7. The method of claim 1 wherein the applied photoresist layer is dried at 120°C for 60 seconds; exposed to radiation having a wavelength of 193 nm; the exposed photoresist coating layer thermally treated; and the thermally treated, exposed photoresist coating layer developed.

8. A chemically-amplified positive photoresist composition comprising:

one or more photoacid generator compounds and a silsesquioxane resin that comprises pendant fluoroalkyl groups,

wherein exposing of a coating layer of the photoresist to 193 nm radiation does not result in a detectable output of Si species at a concentration of 1×10^{13} molecules/cm^2 or greater.

9. The photoresist composition of claim 8 wherein the photoresist is free of any resins other than fluorinated silsesquioxane resins.

10. A coated substrate comprising:

a) an underlying organic polymer composition disposed above a substrate surface;

b) a coating layer of the photoresist composition of claim 8 disposed above the underlying polymer composition coating layer.